



Fruit Monster

Grade 3 Multiplication and Division Situations 4 levels

Probing Questions

- What question does this puzzle ask?
- How do you decide how many to choose?

What Concepts Are Being Developed?

Students explore the relationships among the quantities without any symbols. This develops an understanding of multiplication and division as inverse operations.

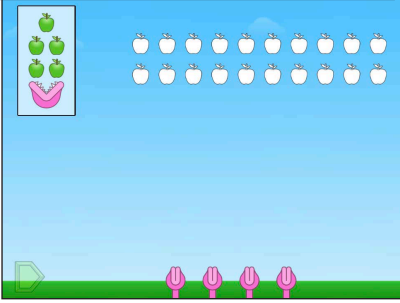
Classroom Connection

Explore strategies students are using to solve. Ask students to develop word problems for different types of puzzles and compare them, reflecting on how the unknown shifts.

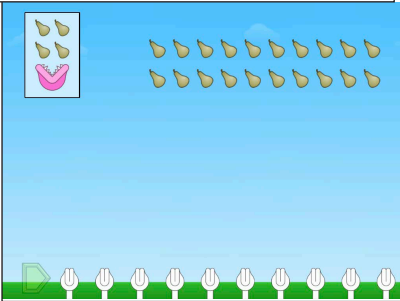


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Equal groups situation: Product unknown.



Equal groups situation: Number of groups unknown



Multiplication and Division Situations - 1



Leg Drape LI

Grade 3 Multiplication and Division Situations 3 levels

Probing Questions

- What does the number represent?
- What do you need to find?
- How are you figuring it out?

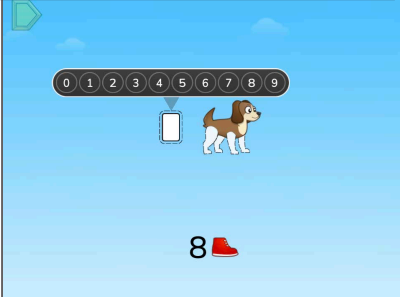
Something to Think About

The snake puzzle helps students explore and discuss the 0 property of multiplication.

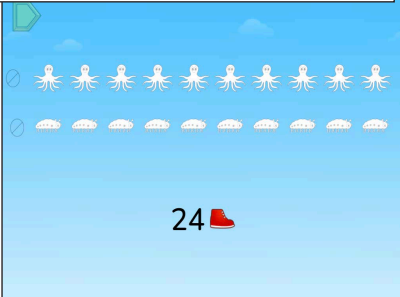
Uncover the Thinking

Present puzzles where the unknown is in different places and ask students to explain how they decide how to solve the varying puzzles.

Equal groups: number of groups unknown



Equal groups: size of groups unknown



Multiplication and Division Situations - 2



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Fair Sharing LI

Grade 3

Multiplication and Division Situations

3 levels

Probing Questions

- What is this puzzle asking you to find?
- How do you figure out how many are in each group?

What's Important Here?

This game is an extension of Fair Sharing in the Division Concepts objective. Level 1 reviews the game and levels 2 and 3 quickly transition to division notation and then to word problems.

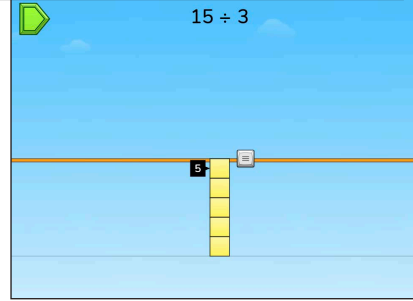
Something to Think About

Level 3 presents the situation using word problems. Consider asking students to give the answer in words. Emphasize the vocabulary associated with the quantities in equal group situations.

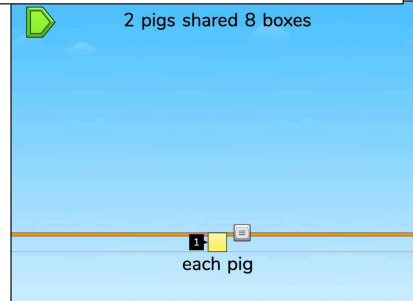
STMath.

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Help students read the expression using correct vocabulary.



Note how all of the words turn to visuals after the student chooses their answer.



Multiplication and Division Situations - 3



Multiplication Facts

Grade 3

Multiplication and Division Situations

4 levels

Probing Questions

- What do you have to find in this puzzle?
- How do you know how many to choose?

Supporting Struggling Students

If a student is struggling with basic facts, let the student choose which materials will help. Use this as an opportunity to make their counting strategies more efficient.

What Strategies Are Being Used?

Ask students to share how they are solving puzzles where the:

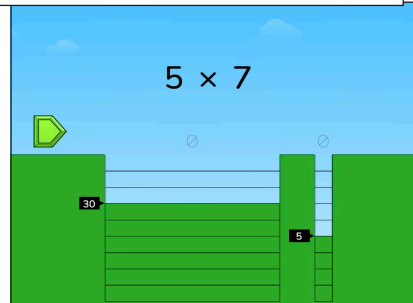
- The group size is unknown
- The number of groups is unknown

Help students connect these strategies to the inverse nature of multiplication and division.

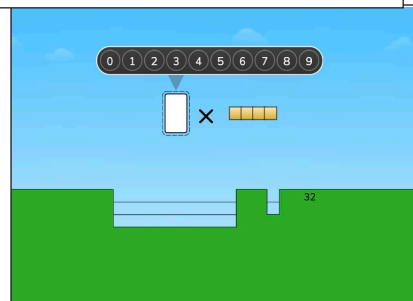
STMath.

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Place value is reinforced as students show the product.



Level 4 shows the unknown in all positions.



Multiplication and Division Situations - 4



Select Box LI

Grade 3

Multiplication and Division Situations

3 levels

Probing Questions

- What does this symbol mean?
- How do you figure out how many are needed?

What's Important Here?

This culminating game uses symbols, incorporates multiplication and division, and shows the unknown in different positions.

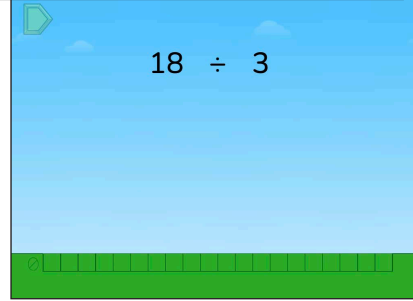
What Concepts Are Being Developed?

Students build models that match with division and multiplication expressions. Students start to recognize that they are using the same 3 numbers for multiplication and division equations.

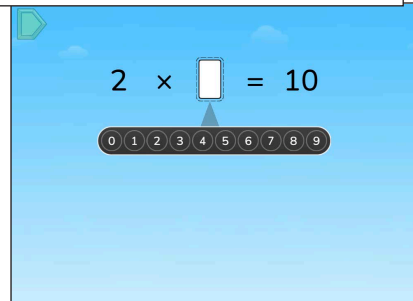
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Problems are presented using standard symbolic notation.



Student flexibly alternate between multiplication and division.



Multiplication and Division Situations - 5